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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/699,188

11/01/2003

Robert M. Ruhland

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03/24/2005

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EXAMINER

CYGAN, MICHAEL T

ART UNIT

PAPER NUMBER

2855

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/699,188	RUHLAND ET AL	
	Examiner	Art Unit	
	Michael Cygan	2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9, 11-18 and 20 is/are rejected.
- 7) ☒ Claim(s) 8, 10 and 19 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/01/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/01/03</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Objections

1. Claims 6 and 7 are identical; one of the claims must be cancelled.
2. Claims 17 and 18 are identical; one of the claims must be cancelled.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1 and 5-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Wang (US 2003/0180445 A1). Wang discloses the claimed invention, a vapor sensing system comprising an active thermal conductivity sensor and a compensating thermal compensating (error) sensor arranged in a Wheatstone bridge circuit such that the compensating signal is subtracted from the active signal when the system is in the presence of an ignitable vapor (such as oxygen or hydrogen). See paragraphs 4, 17, 48, 49, and 98-100. The

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sensor may measure temperature or power changes at a self-heated resistor; see paragraphs 49-50.

4. Claims 1, 6, 7, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Miller (US 6,344,174 B1). Miller discloses the claimed invention, a vapor sensing system comprising an active thermal conductivity (error) sensor and a compensating thermal conductivity sensor arranged in a Wheatstone bridge circuit such that the compensating sensor signal is subtracted from the active sensor signal when the system is in the presence of an ignitable vapor. See lines 13+. The sensor measures temperature changes at a self-heated resistor; see column 1 lines 29-45. The sensor is surrounded by a porous insulating material; see column 2 lines 54-55.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-4 and 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Wang (US 2003/0180445 A1) in view of Adachi (US 4,768,947). Wang teaches the claimed invention except for the

use of an amplifier-microprocessor instructing a controller to shut down a fuel fired appliance associated with the sensor. Adachi teaches the use of a thermal conductivity sensor sensing oxygen flow to shut down a fuel fired appliance utilizing an amplifier and circuitry (microprocessor); see column 5 line 10 through column 6 line 11. It would have been obvious to use the appliance and circuitry taught by Adachi in the system as taught by Wang to form a burner abnormality sensing system, since Adachi teaches that this enforces desirable operation of the appliance, and the sensor of Wang provides the advantage of compensation to that of Adachi.

6. Claims 2-4, 11-15, 17, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Miller (US 6,344,174 B1) in view of Adachi (US 4,768,947). Miller teaches the claimed invention except for the use of an amplifier-microprocessor instructing a controller to shut down a fuel fired appliance associated with the sensor. Adachi teaches the use of a thermal conductivity sensor sensing oxygen flow to shut down a fuel fired appliance utilizing an amplifier and circuitry (microprocessor); see column 5 line 10 through column 6 line 11. It would have been obvious to use the appliance and circuitry taught by Adachi in the system as taught by Miller to form a burner abnormality sensing system, since Adachi teaches that this enforces desirable

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operation of the appliance, and the sensor of Miller provides the advantage of compensation to that of Adachi.

Allowable Subject Matter

7. Claims 8, 10, and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, since the prior art neither discloses nor fairly teaches the use of an error sensor surrounded by a membrane which specifically excludes only ignitable vapors.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Paired thermal conductivity sensors are taught by McNally (US 4,313,907), Poli (US 5,401,470), Takahashi (US 5,948,966), and Ohmi (US 6,622,543 B1). Appliance leak detection is taught by Comuzie (US 5,280,802), Huang (US 6,164,958), Langmead (US 6,390,028 B1), Trant (US 6,412,447 B1), and Lesage (US 6,807,925 B1).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cygan whose telephone number is

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(571) 272-2175. The examiner can normally be reached on 8:30-6 M-Th, alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MICHAEL CYGAN, PH.D.
PRIMARY EXAMINER